BOOK OF ABSTRACTS
POSTERS

Island BIOLOGY 2019

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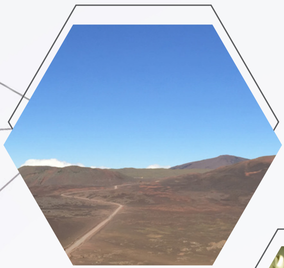

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Providing knowledge about seed germination ecology to boost establishment success in revegetation projects: case study of Heteropogon contortus

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Dry lands including savannas cover an important proportion of terrestrial areas and are home for more than a third of global population. However, changes in land use and climate are causing severe species loss in these habitats. In a geographically limited area such as Reunion Island, revegetation projects including native species could allow to counter human-driven habitat degradation. Nevertheless, lack of knowledge, especially regarding native seed germination ecology often hinders their use for revegetation purposes. The aim of our study was to provide information about seed germination ecology of *Heteropogon contortus* (Poaceae), the dominant and noticeable savannas species of Reunion Island. Through germination experiments carried out in controlled lab conditions, dormancy and light requirements of *H. contortus* seeds were assessed over a 3-year storage period. In addition, the effects of smoke water solutions on *H. contortus* seeds germination capacity were determined. During the first year, seeds germinate in low proportions, consistent with a dormancy phenomenon. Moreover, between one and two years, germination percentages are higher in light than in darkness, suggesting they are photoblastic (i.e. require light for germination). Interestingly, seeds treated with smoke water solutions germinated in higher proportions than control seeds in both daily light and darkness during the two first years of storage. The germination strategies (dormancy and photoblasty) set up by *H. contortus* are likely driven by harsh conditions found in arid habitats such as savannas. While dormancy could help avoiding germination in the drier season, photoblasty would be linked to an adaptation to fire, indicating that its environment is suitable for its establishment. The methods we used to treat seeds could be adopted for large-scale *H. contortus* habitats revegetation projects, due to their low cost, their efficiency and their reproducibility.

Keywords: Heteropogon contortus, germination, physiological dormancy, photoblasty, smoke, infused water, revegetation

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